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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,712	02/18/2004	Shin Fujita	118376	1721
25944	7590	12/20/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER CHEN, WEN YING PATTY	
			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <input checked="" type="checkbox"/>	Applicant(s)	
	10/779,712	FUJITA ET AL.	
	Examiner	Art Unit	
	Wen-Ying P. Chen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 3-9 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,10-13,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

Applicant's Amendment filed Oct. 24, 2005 has been received and entered. Claims 1-2, 10-13 and 15-16 remain pending in the current application.

### ***Drawings***

The drawings were received on Oct. 24, 2005. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 103***

Claims 1-2, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa et al. [A] (US 2002/0113936) in view of Yanagawa et al. [B] (US 6583846).

With respect to claim 1 (Amended): Yanagawa et al. [A] disclose in Figures 1 and 2 a liquid crystal panel/electro-optical panel comprising:

a first substrate (element 1A);

a plurality of scanning lines (element 2) and a plurality of data lines (element 3), and a plurality of capacitive lines (element 4) formed on the first substrate;

a second substrate (element 1B);

a first light-shielding layer (element BM) beneath the second substrate that covers the scanning lines and the data lines;

projecting patterns (element 10) formed on the first substrate to control the distance between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the corresponding data line; and

electro-optic material filled between the first substrate and the second substrate, the projecting patterns (element 10) being formed so as to overlap the first light-shielding layer (element BM).

Figure 1 and 2 did not show a second light-shielding layer and further, Yanagawa et al. [A] fail to disclose that the projecting pattern further overlaps at least one of the corresponding scanning line, capacitive line, and an area surrounded by the corresponding scanning line, data line, and capacitive line.

However, in Figure 21 Yanagawa et al. [A] teach that second light-shielding layers (element 50) are formed to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer and Yanagawa et al. [B] disclose in Figure 9 a display panel comprising of projecting patterns (element 10) which overlaps the corresponding data line (element 3) and the capacitive line (element 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Yanagawa et al. [A] in Figures 1 and 2 wherein the second light-shielding layer is added to the invention as in Figure 21, since Yanagawa et al. [A] teach that the second light-shielding layer helps to improve the aperture ration of the pixels (Paragraph 0127) and to position the projecting patterns so that it overlaps the data line and the capacitive line as taught by Yanagawa et al. [B], since Yanagawa

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et al. [B] teach that by positioning the projecting patterns at this location helps to prevent the galvanic corrosion of the data line and that since the location is approximately at the center of the pixel dimension, the thickness of the liquid crystal layer can be maintained (Column 12, lines 4-15).

As to claim 2: Yanagawa et al. [A] disclose in Figure 1 that the center of the projecting pattern (element 10) is formed on the corresponding data line (element 3).

As to claim 10: Yanagawa et al. [A] disclose in Figure 21 that the second light-shielding layers being provided on the downside of the direction of rubbing on the first light-shielding layer.

As to claim 16: Yanagawa et al. [A] disclose in Paragraph 0004 that the liquid crystal display panel is used as display terminals of OA equipments.

Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castleberry (US 5576859) in view of Yanagawa et al. [B] (US 6583846).

With respect to claim 11 (Amended): Castleberry discloses in Figures 4 and 5 a liquid crystal panel/electro-optical panel comprising:

a first substrate (element 10);

a plurality of scanning lines (element Xi) and a plurality of data lines (element Yj)

formed on the first substrate;

transmissive areas through which light is transmitted and reflective area from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines

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(Column 4, lines 60-62), wherein the device operates in transflective mode, meaning having regions where light is transmitted and regions where light is reflected);

a second substrate (element 23);

a first light-shielding layer (element Zij) beneath the second substrate that covers the scanning lines and the data lines;

projecting patters (element 20) formed on the first substrate to control the distance between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer;

electro-optic material filled between the first substrate and the second substrate (Column 5, lines 36-42);

second light-shielding layers (element Sij) to prevent light leakage due to the formation of the projecting patters formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer; and

each reflective areas being formed on the downside of the direction of rubbing with respect to the corresponding projecting pattern (since the spacers are formed at the intersection of each data line and scan line).

Although from the figures, projecting patterns (element 20) seem to be located at the intersections of each data line and scan line and overlapping the TFT components, but Castleberry fails to specifically disclose the exact location and dimensions of the projecting patterns so that it overlaps both the data line and the scan line.

However, Yanagawa et al. [B] disclose in Figure 5 a display panel comprising of projecting patterns (element 10), which overlaps the corresponding data line (element 3) and the corresponding scanning line (element 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Castleberry wherein the position of the projecting patterns overlaps the data line and the scanning line as taught by Yanagawa et al. [B], since Yanagawa et al. [B] teach that by positioning the projecting patterns at this location helps to prevent the liquid crystal material from being present at the intersection so that metal components is prevented from being dissolved into the liquid crystal (Column 10, lines 64-67 and Column 11, lines 1-2).

As to claim 15 (Amended): Castleberry discloses in Figures 4 and 5 a liquid crystal panel/electro-optical panel comprising:

- a first substrate (element 10);

- a plurality of scanning lines (element Xi) and a plurality of data lines (element Yj)

formed on the first substrate;

transmissive areas through which light is transmitted and reflective area from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines (Column 4, lines 60-62), wherein the device operates in transflective mode, meaning having regions where light is transmitted and regions where light is reflected);

- a second substrate (element 23);

- a first light-shielding layer (element Zij) beneath the second substrate that covers the scanning lines and the data lines;

projecting patters (element 20) formed on the first substrate to control the distance between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer and are formed on flat areas over the first light-shielding layer;

electro-optic material filled between the first substrate and the second substrate (Column 5, lines 36-42);

second light-shielding layers (element Sij) to prevent light leakage due to the formation of the projecting patters formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

Although from the figures, projecting patterns (element 20) seem to be located at the intersections of each data line and scan line and overlapping the TFT components, but Castleberry fails to specifically disclose the exact location and dimensions of the projecting patterns so that it overlaps both the data line and the scan line.

However, Yanagawa et al. [B] disclose in Figure 5 a display panel comprising of projecting patterns (element 10), which overlaps the corresponding data line (element 3) and the corresponding scanning line (element 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Castleberry wherein the position of the projecting patterns overlaps the data line and the scanning line as taught by Yanagawa et al. [B], since Yanagawa et al. [B] teach that by positioning the projecting patterns at this location helps to prevent the liquid crystal material from being present at the intersection



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so that metal components is prevented from being dissolved into the liquid crystal (Column 10, lines 64-67 and Column 11, lines 1-2).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Castleberry (US 5576859) in view of Yanagawa et al. [B] (US 6583846) further in view of Kajita et al. (US 6275280).

Castleberry discloses in Figures 4 and 5 a liquid crystal panel/electro-optical panel comprising:

- a first substrate (element 10);

- a plurality of scanning lines (element Xi) and a plurality of data lines (element Yj) formed on the first substrate;

- transmissive areas through which light is transmitted and reflective area from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines (Column 4, lines 60-62), wherein the device operates in transflective mode, meaning having regions where light is transmitted and regions where light is reflected);

- a second substrate (element 23); a first light-shielding layer (element Zij) beneath the second substrate that covers the scanning lines and the data lines;

- projecting patters (element 20) formed on the first substrate to control the distance between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer;

- electro-optic material filled between the first substrate and the second substrate (Column 5, lines 36-42);

second light-shielding layers (element Sij) to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

Although from the figures, projecting patterns (element 20) seem to be located at the intersections of each data line and scan line and overlapping the TFT components, but Castleberry fails to specifically disclose the exact location and dimensions of the projecting patterns so that it overlaps both the data line and the scan line and that Castleberry lacks to specifically disclose a color filter layer including blue color filters.

However, Yanagawa et al. [B] disclose in Figure 5 a display panel comprising of projecting patterns (element 10), which overlaps the corresponding data line (element 3) and the corresponding scanning line (element 2) and Kajita et al. disclose in Figure 6 a liquid crystal display device comprising of color filters, which includes blue color filters (element 3) formed on the downside of the direction of rubbing with respect to the corresponding projecting pattern (element 24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Castleberry wherein the position of the projecting patterns overlaps the data line and the scanning line as taught by Yanagawa et al. [B], since Yanagawa et al. [B] teach that by positioning the projecting patterns at this location helps to prevent the liquid crystal material from being present at the intersection so that metal components is prevented from being dissolved into the liquid crystal (Column 10, lines 64-67 and Column 11, lines 1-2) and that the display panel comprises of color filters including blue color filters, since Kajita et al. teach that blue is one of the three primary colors

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that can be employed as the color filter so that various shades of color can be produced by mixtures of the blue color filter and the other two primary colors (Column 14, lines 21-25).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Castleberry (US 5576859) in view of Yanagawa et al. [B] (US 6583846) further in view of Kajita et al. (US 6275280) and Ota et al. (JP 2002-341329).

Castleberry discloses in Figures 4 and 5 a liquid crystal panel/electro-optical panel comprising:

- a first substrate (element 10);

- a plurality of scanning lines (element Xi) and a plurality of data lines (element Yj) formed on the first substrate;

- transmissive areas through which light is transmitted and reflective area from which the light is reflected being formed on areas surrounded by the data lines and the scanning lines (Column 4, lines 60-62), wherein the device operates in transflective mode, meaning having regions where light is transmitted and regions where light is reflected);

- a second substrate (element 23);

- a first light-shielding layer (element Zij) beneath the second substrate that covers the scanning lines and the data lines;

- projecting patters (element 20) formed on the first substrate to control the distance between the first substrate and the second substrate, the projecting patterns being formed so as to overlap the first light-shielding layer; electro-optic material filled between the first substrate and the second substrate (Column 5, lines 36-42);

second light-shielding layers (element Sij) to prevent light leakage due to the formation of the projecting patterns formed so as to overlap the first light-shielding layer and all or part of each of the second light-shielding layers also functions as the first light-shielding layer.

Although from the figures, projecting patterns (element 20) seem to be located at the intersections of each data line and scan line and overlapping the TFT components, but Castleberry fails to specifically disclose the exact location and dimensions of the projecting patterns so that it overlaps both the data line and the scan line and that Castleberry lacks to specifically disclose a color filter layer including blue color filters or the forming of third light-shielding layers.

However, Yanagawa et al. [B] disclose in Figure 5 a display panel comprising of projecting patterns (element 10), which overlaps the corresponding data line (element 3) and the corresponding scanning line (element 2) and Kajita et al. disclose in Figure 7 a liquid crystal display device comprising of color filters (elements 3-5) formed beneath the second substrate; and Ota et al. disclose in Figure 1 a liquid crystal display device comprising of third light-shielding layers (element 6c) formed so that the color filters having the same color have apertures with the same area.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Castleberry wherein the position of the projecting patterns overlaps the data line and the scanning line as taught by Yanagawa et al. [B], since Yanagawa et al. [B] teach that by positioning the projecting patterns at this location helps to prevent the liquid crystal material from being present at the intersection so that metal components is prevented from being dissolved into the liquid crystal (Column 10,

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lines 64-67 and Column 11, lines 1-2) and that the display panel comprises of color filters as taught by Kajita et al. and third light-shielding layers as taught by Ota et al., since Kajita et al. teach that the color filters consist of the three primary colors so that various shades of color can be produced (Column 14, lines 21-25); and Ota et al. teach that by forming of the third light-shielding layers thus improve the aperture so that the display device have better image quality and higher luminance (Paragraph 0018 and Abstract).

### ***Response to Arguments***

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444.

The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen  
Examiner  
Art Unit 2871

WPC  
12/14/05

*Andrew Schechter*  
ANDREW SCHECHTER  
PRIMARY EXAMINER